



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2014-0125; Directorate Identifier 2013-NM-119-AD; Amendment 39-17778; AD 2014-05-05]**

**RIN 2120-AA64**

**Airworthiness Directives; The Boeing Company Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule; request for comments.

**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain The Boeing Company Model 777 airplanes. This AD requires, for certain airplanes, replacing radio altimeter transceivers with upgraded units, and, for all airplanes, replacing low range radio altimeter antennas with new antennas. This AD was prompted by operator reports of erratic low range radio altimeter (LRRA) operation while the airplane is airborne. We are issuing this AD to prevent adverse system responses and flight deck effects that could result in loss of controllability of the airplane or landing short of the runway during landing.

**DATES:** This AD is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

We must receive comments on this AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0125; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Walter Cameron, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle Aircraft

Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: (425) 917-6460; fax: (425) 917-6590; email: [walter.cameron@faa.gov](mailto:walter.cameron@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We have received operator reports of erratic low range radio altimeter (LRRRA) operation while the airplane is airborne. The symptoms of erratic LRRRA can include the following:

- Large differences between captain's and first officer's radio altitudes or a negative altitude in air.
- "NO LAND 3" or "NO AUTOLAND" Engine Indication and Crew Alerting System (EICAS) message.
- Autopilot disconnect, inability to engage autopilot, or flight directors bias-out-of view.
- Autothrottle disconnect, autothrottle retard, or inability to engage autothrottle into SPD (Speed) mode.
- Unexpected configuration warnings after takeoff, during approach, or during go-around
- Missing or inappropriate aural height callouts
- Unavailability of auto speedbrake via "AUTO SPEEDBRAKE" EICAS message.
- Nuisance or missing Ground Proximity Warning System (GPWS) warnings.
- Electronic Engine Control (EEC) indicating ground mode and engine going to ground idle.
- Inability to engage Lateral Navigation (LNAV).

Erratic LRRRA operation events have been determined to possibly result from the following causes:

- Antenna alteration at the antenna level can create micro cracks on the electrical grounding connection, damage the coax cables or the coax connector center pin contact. Any one of these damages to the antenna assembly can affect the radio altimeter system functionality.
- The currently installed radio altimeter transceivers on some airplanes may not have adequate antenna monitoring capabilities for detecting antenna deterioration caused by environmental conditions or damage to the antenna during antenna alteration (which can result in breaks in the coaxial cables or damage to the coax connector).

These conditions, if not corrected, could result in adverse system responses and flight deck effects that could result in loss of controllability of the airplane or landing short of the runway during landing. We are issuing this AD to correct the unsafe condition on these products.

#### **Relevant Service Information**

We reviewed Boeing Alert Service Bulletin 777-34A0191, Revision 1, dated March 23, 2012, and Boeing Alert Service Bulletin 777-34A0192, dated December 14, 2012. For information on the procedures and compliance times, see this service information at <http://www.regulations.gov> by searching for Docket No. FAA-2014-0125.

#### **FAA's Determination**

We are issuing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

#### **AD Requirements**

This AD requires accomplishing the actions specified in the service information identified previously.

### **FAA's Justification and Determination of the Effective Date**

There are no products of this type currently registered in the United States. However, this rule is necessary to ensure that the described unsafe condition is addressed if any of these products are placed on the U.S. Register in the future. Therefore, we find that notice and opportunity for prior public comment are unnecessary and that good cause exists for making this amendment effective in less than 30 days.

### **Comments Invited**

This AD is a final rule that involves requirements affecting flight safety and was not preceded by notice and an opportunity for public comment. However, we invite you to send any written data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include the docket number FAA-2014-0125 and Directorate Identifier 2013-NM-119-AD at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this AD.

### **Costs of Compliance**

We estimate that this AD affects 0 airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

### Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Transceiver Replacement	2 work-hours X \$85 per hour = \$170	\$9,515	\$9,685	\$0
Antenna Replacement	7 work-hours X \$85 per hour = \$595	\$2,703	\$3,298	\$0

### Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. “Subtitle VII: Aviation Programs” describes in more detail the scope of the Agency’s authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: “General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

(1) Is not a “significant regulatory action” under Executive Order 12866,

- (2) Is not a “significant rule” under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**2014-05-05 The Boeing Company:** Amendment 39-17778; Docket No. FAA-2014-0125; Directorate Identifier 2013-NM-119-AD.

#### **(a) Effective Date**

This AD is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to The Boeing Company Model 777-200, -200LR, -300, -300ER, and 777F series airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin 777-34A0192, dated December 14, 2012.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 34, Navigation.

**(e) Unsafe Condition**

This AD was prompted by operator reports of erratic low range radio altimeter (LRRRA) operation while the airplane is airborne. We are issuing this AD to prevent adverse system responses and flight deck effects that could result in loss of controllability of the airplane or landing short of the runway during landing.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Replacement of Radio Altimeter Transceivers**

For airplanes identified in Boeing Alert Service Bulletin 777-34A0191, Revision 1, dated March 23, 2012: Within 24 months after the effective date of this AD, replace radio altimeter transceivers with upgraded units, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 777-34A0191, Revision 1, dated March 23, 2012.

**(h) Replacement of Radio Altimeter Antennas**

For all airplanes: Within 36 months after the effective date of this AD, replace low range radio altimeter transmit and receive antennas with new antennas, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 777-34A0192, dated December 14, 2012.



**(i) Credit for Previous Actions**

This paragraph provides credit for the actions specified in paragraph (g) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Service Bulletin 777-34A0191, dated September 20, 2011, which is not incorporated by reference in this AD.

**(j) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the Seattle ACO, send it to the attention of the person identified in paragraph (k)(1) of this AD. Information may be emailed to:

[9-ANM-Seattle-ACO-AMOC-Requests@faa.gov](mailto:9-ANM-Seattle-ACO-AMOC-Requests@faa.gov).

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO, to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane.

**(k) Related Information**

(1) For more information about this AD, contact Walter Cameron, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: (425) 917-6460; fax: (425) 917-6590; email: [walter.cameron@faa.gov](mailto:walter.cameron@faa.gov).

(2) Service information identified in this AD that is not incorporated by reference in this AD may be obtained at the address specified in paragraph (1)(3) of this AD.

**(I) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Boeing Alert Service Bulletin 777-34A0191, Revision 1, dated March 23, 2012.

(ii) Boeing Alert Service Bulletin 777-34A0192, dated December 14, 2012.

(3) For Boeing service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>.

(4) You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to:

<http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Renton, Washington, on February 7, 2014.

Jeffrey E. Duven,  
Manager,  
Transport Airplane Directorate,  
Aircraft Certification Service.

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